

### Remarks

#### Obviousness Rejection

The examiner maintained the rejection of claims 1-49 as obvious under 35 U.S.C. § 103(a) over Kharitonov (U.S. Patent No. 5, 110,995). The examiner contends that "the temperature of about 270 °C is sufficiently close to the temperature of about 275 °C taught by Kharitonov, et al., as to be a difference in degree, which would not be rendered patentably distinct from the prior art." April 19, 2004 office action, p. 3. The examiner finds Applicant's argument that the claimed process maintains at least a portion of benzene in the liquid phase to be unconvincing. According to the examiner, it would be reasonable to expect, at Kharitonov's lower temperatures, that at least a portion of the benzene would be in the liquid phase.

#### Response

Applicant does not agree with the examiner's contention. However, the claims have been rewritten to more accurately focus on the novel features of the claims. Claims 1-49 have been canceled and new claims 50-161 have been added. All of the new claims include the basic limitations of claim 50, which reads:

50. (New) A process comprising:

**providing a distillation column reactor comprising oxidation catalyst  
between a distillation zone and a reaction zone;**

**feeding liquid benzene to the reaction zone;**

**feeding oxidant gas to the distillation zone;**

**contacting benzene and oxidant gas with the oxidation catalyst under oxidation  
conditions effective to catalytically hydroxylate at least a portion of the  
benzene to produce hydroxylated product.**

In order to establish that the claims are *prima facie* obvious over Kharitonov, the examiner must point to two things in Kharitonov or in another reference, and not in the applicant's disclosure--(1) the suggestion of the invention, and (2) the expectation of its success. *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991). See also MPEP 2143. The examiner has not met this burden with respect to the new claims.

The examiner has not pointed to a teaching or suggestion in Kharitonov of a process comprising **"feeding liquid benzene to the reaction zone"** and **"feeding oxidant gas to the distillation zone"** of a distillation column reactor **"comprising oxidation catalyst located between a distillation zone and a reaction zone."** Claim 50 and subsequent claims.

Kharitonov teaches that benzene and nitrogen oxide are introduced to the catalyst together, as a "reaction mixture." Kharitonov states:

The catalyst is charged into a reactor with an inside diameter of 7 mm. the catalyst volume is 2 cm<sup>3</sup>, particle size is 0.5-1 mm. The catalyst is heated to the predetermined temperature, and **the reaction mixture, benzene or a derivative thereof, nitrogen oxide and, when required, helium or any other inert gas, is introduced at an appropriate rate.**

Kharitonov, col. 5, ll. 7-9 (emphasis added). See also the examples, where the composition of the reaction mixture is described as follows:

5 mol. % benzene, 20 mol. % nitrous oxide, the balance helium (Examples 1-15, col. 6, ll. 12-13);

5 mol. % benzene, and 95 mol. % nitrous oxide (Example 16-86, col. 6, ll. 40-41);

5 mo.% benzene, 20 mol.% nitrous oxide, the balance helium (Example 87, col. 11, ll. 57-58);

5 mol. % chlorobenzene, 20 mol. % nitrous oxide, the balance, helium (Example 91, col. 13, ll. 42-43);

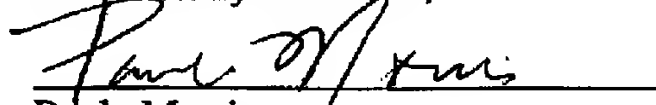
5 mol. % toluene, 20 mol. % nitrogen oxide, the balance helium (Example 92, col. 42, ll. 6-7).

The examiner cannot establish *prima facie* obviousness merely by arguing that the claimed process could be derived by modifying Kharatinov to result in the claimed process. In order to establish *prima facie* obviousness, the examiner has the burden to point to a teaching or suggestion in the **references themselves** that it would be desirable to make such a modification. MPEP 2143.01; *In re Brouwer*, 37 U.S.P.Q.2d 1663, 1666 (Fed. Cir. 1995). The examiner has not met this burden.

### CONCLUSION

For the foregoing reasons, Applicant respectfully requests that the examiner enter the amendments and allow all of the pending claims. The Commissioner is hereby authorized to charge any fees in connection with this paper, or to credit any overpayment, to Deposit Account No. 50-0997 maintained by Paula D. Morris & Associates, P.C. d/b/a The Morris Law Firm, P.C.

Respectfully submitted,



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